3. Christmas

Program Name: Christmas.java Input File: christmas.dat

The alien planet Blarg celebrates gift giving at Christmas time just like we do on Earth. This Christmas season, the Blargian children really want 3 new toys: Bligs, Snorgs, and Kords. Since Blargian Santa's factory does not have the technology to make these, he has decided to make all of the rest of the toys in his factory, and outsource the making of these three toys to external contractors.
There are several potential contractors that Blargian Santa is looking at hiring. They are paid by the hour, and advertise quotas for each of the three toys that they will make, per hour.

Blargian Santa is bad at math, so he has sent a message to earth for help. Which contractor should he hire?

Input
The first line of input contains T, the number of test cases that follow.

The first line of each test case will be a single integer C, the number of cities on Blarg. The next C lines describe the amount of each toy the Blargian children in that city desire for Christmas. Each line contains 3 space separated integers: cB, cS, and cK, the number of Bligs, Snorgs, and Kords respectively.
The next line of each test case contains a single integer N, the number of suitable contractors Blargian Santa has found.
The next N lines describe each contractor. Each line contains a string, the name of the contractor, and then four space separated integers: B, S, K, and P, the number of Bligs, Snorgs, and Kords they will make per hour, and the price they charge per hour. They do not work partial hours.

Output
For each test case, print the name of the contractor that fulfills the toy order for the least amount of money, and the total price for that contractor, separated by a space. It is guaranteed that at least one contractor will be able to fulfill the order, and that there will be a unique "best" contractor.

Constraints
```
1 <= T <= 8
1 <= C, N <= 10
0 <= cB, cS, cK <= 1000
1 <= B, S, K, P <= 1000
```

Example Input File
```
2
2
0 0 1
0 0 2
2
A 0 0 2 40
B 0 0 1 25
5
57 82 54
57 83 73
43 40 47
61 40 90
3 13 24
3
A 56 2 26 10
B 45 11 57 52
C 63 19 10 33
```

Example Output to Screen

```
B 75
C 957
```

Explanation of Output

In the first case it seems the contractors only make Kords. Thankfully, the children do not want anything else this season. The total toy order is 0 Bligs, 0 Snorgs, and 3 Kords. Contractor A can produce 2 Kords an hour, so to fufill the order, they would have to work 2 hours, bringing the total cost for A to 80. Contractor B produces 1 Kord an hour, meaning it will take them 3 hours, but at 25 an hour, the total cost is 75. Therefore, Contractor B is cheaper by 5, and Blargian Santa should hire B.

In the second case the totals are much higher and even though C produces the fewest number of Kords per hour the larger numbers of Bligs and Snorgs produced offsets the low Kord value making C the best choice.